

## **Occasional Paper**

# **Labour Force Characteristics of Aboriginal and Torres Strait Islander Australians**

**Experimental Estimates from  
the Labour Force Survey**

**2000**



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**Labour Force  
Characteristics of  
Aboriginal and Torres Strait  
Islander Australians**

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the Labour Force Survey**

**2000**

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AUSTRALIAN BUREAU OF STATISTICS

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## LIST OF ABBREVIATIONS

ABBREVIATIONS	ABS	Australian Bureau of Statistics
	CDEP	Community Development Employment Projects
	ERP	Estimated Resident Population
	LFS	Labour Force Survey
	NATSIS	National Aboriginal and Torres Strait Islander Survey
	RSE	relative standard error

## SUMMARY

This publication describes the labour force characteristics of Aboriginal and Torres Strait Islander (Indigenous) Australians. The data presented are based mainly on information collected in one month each year from 1994 to 2000 in the ABS Labour Force Survey (LFS) from people aged 15 years and over who identified as Indigenous. The estimates in this publication should be considered as experimental and are available at a national level only.

This publication also draws attention to statistical and data quality issues which should be considered when using LFS estimates to describe labour force characteristics of Indigenous people. The estimates are based on a sample survey and are subject to sample error and non-sampling error. Limitations in the data prevent the analysis of the Indigenous labour force beyond the broad characteristics such as employment and unemployment at the national level. Estimates are presented for a 7-year period, although caution is required in analysing changes over time, both in absolute terms and relative to the rest of Australia's population. Although the Indigenous population has a younger age structure than the non-Indigenous population, the estimates have not been age-standardised to adjust for differences in age structure.

In February 2000 there were 134,600 Indigenous people aged 15 years and over in the labour force. The number of Indigenous people in employment was 110,900, which represented 44% of the Indigenous population aged 15 years and over and 1.2% of the total number of Australians in employment. There were 23,700 Indigenous people unemployed.

When compared with the rest of Australia's population, the Indigenous population has a lower employment to population ratio, a considerably higher unemployment rate and a lower labour force participation rate. In February 2000 the employment to population ratio of 44% for Indigenous persons compares with a ratio of 59% for non-Indigenous people. The unemployment rate was 17.6% for Indigenous people, which compares with 7.3% for non-Indigenous people. The labour force participation rate, which is the number in the labour force expressed as a percentage of the population aged 15 years and over, was 52.9% for Indigenous people and 63.7% for non-Indigenous people.

The unemployment rate for Indigenous people fluctuated between 1994 and 2000, with the highest levels of 27.8% in 1994 and 25% in 1998, and lowest levels of 20.9% in 1995 and 17.6% in 2000. This compares with the unemployment rates for non-Indigenous people which, over the same 7-year period, recorded its highest levels of 10.6% in 1994 and 9.7% in 1995, and the lowest levels of 8.1% in 1999 and 7.3% in 2000.

Nearly 20% of the Indigenous population aged 15 years and over live in sparsely settled areas, which are relatively remote areas where employment opportunities are scarce. In contrast, less than 1% of the non-Indigenous population live in such areas. For Indigenous people living in sparsely settled areas, the unemployment rate in February 2000

## **SUMMARY** *continued*

was measured at 9.4% and the labour force participation rate was 29.3%. Indigenous people participating in the Commonwealth Government's Community Development Employment Projects scheme, who are classified by the ABS as employed, are likely to form a significant proportion of the Indigenous labour force in sparsely settled areas.

The LFS is the main source of information about Australia's civilian labour force. In common with most other comparable countries, ABS uses international standards and definitions of employment and unemployment in the LFS. The survey sample, which covers about 60,000 persons (0.5% of Australia's population), is designed to provide reliable estimates for levels and changes in the major labour force characteristics of the total population. The survey is not designed to overcome some of the practical difficulties associated with measuring the labour force status of Indigenous people, particularly in remote regions. Because the LFS estimates for Indigenous people are based on a very small sample of Indigenous persons (on average, about 1,100 persons) and because the quality of the data has some shortcomings, the estimates are considered experimental.



## CHAPTER 1

## INTRODUCTION

This publication presents information about the labour force characteristics of Aboriginal and Torres Strait Islander (Indigenous) Australians aged 15 years and over, based on data collected in the national monthly Labour Force Survey (LFS) over the period 1994–2000. The estimates in this publication should be considered as experimental and are available at a national level only.

Labour force data for the Indigenous population are important for assessing their employment outcomes and for measuring changes in their social and economic conditions. The employment opportunities and levels of unemployment of Indigenous people are issues of considerable political and social concern.

Regularly available information about the labour force characteristics of the Indigenous population was identified as one of the key priority areas in responses to the ABS Indigenous Survey Strategy papers and other discussions with key government agencies over the last few years. Demand also comes from academic and other researchers, welfare agencies and training providers and from Indigenous organisations.

The monthly LFS is the main source of information about the labour force status and participation of Australia's civilian population. This survey is the largest ABS regular household survey and is conducted on a sample of about 63,000 persons in 30,000 households across Australia each month.

In March 1994, a question was added to the LFS questionnaire which sought to identify the Indigenous status of household members. In this way, information could be collected about the labour force characteristics of Indigenous people. The same question has been included in subsequent years, in each February survey, so that data are now available for one month each year over 7 successive years.

The estimates of the labour force characteristics of the Indigenous population thus obtained for 1994–2000 are considered experimental because they are based on a very small sample of Indigenous persons (on average about 1,100 persons), and because the quality of the data has some shortcomings. To help improve the estimates, and to compensate for under-enumeration, the LFS estimates for Indigenous persons have been calculated so that they add to independent estimates and projections of the Indigenous population by age, sex and State/Territory. As described in Chapter 5, the independent estimates and projections of the Indigenous population are themselves considered by the ABS as 'experimental'.

To help in the interpretation of the experimental estimates, this paper also draws attention to a number of statistical issues that need to be considered when using LFS estimates to describe Indigenous labour force characteristics. These have an impact on the relevance, quality and reliability of Indigenous labour force estimates from the LFS.

Some of these statistical issues arise because the LFS is not designed specifically to overcome some of the difficulties associated with measuring labour force and other characteristics of the Indigenous population. These difficulties include the small population numbers, the wide population dispersion, and the high proportion who live in remote areas. There are also some practical difficulties with applying the standard LFS concepts and definitions and using the standard LFS survey questions in Indigenous communities, particularly in remote regions. In addition, the very small sample of Indigenous persons identified in the LFS has implications for the reliability of the survey estimates, and may result in estimates not being very accurate measures of the total Indigenous population.

Information on the labour force status of Indigenous people is also available from two other data collections—the five yearly Census of Population and Housing and the 1994 National Aboriginal and Torres Strait Islander Survey (NATSIS). Although the statistics available from the Census, NATSIS and the LFS are based on the same underlying concepts, there are differences in the methodologies and definitions used which, in turn, affect the comparability of the data. Broad estimates from these sources are presented in a summary table later in this paper.

The ABS recognises the need for accurate, regular and timely information about the labour force status of the Indigenous population. To achieve this, annual estimates of Indigenous persons employed, unemployed and not in the labour force, based on the LFS, will be produced from 2002 onwards using a larger sample of Indigenous persons. In addition, the first Indigenous Social Survey, to be conducted in 2002, will provide a range of data on labour force characteristics and employment arrangements of Indigenous people.

## CHAPTER 2

## LABOUR FORCE CONCEPTS AND DEFINITIONS

### 2.1 INTRODUCTION

Information about the labour force characteristics of the Indigenous population have been collected in the LFS using international standards for defining and measuring employment and unemployment. The distinction between paid and unpaid work is fundamental to these definitions. As a result, the definitions may not always give adequate recognition to the 'unpaid' activities which some Indigenous people undertake, for example as part of social and cultural obligations within communities in remote and rural areas. However, the use of standard definitions across all population groups is seen as important for ensuring objectivity and uniformity in measuring Australia's labour force.

This chapter provides information about the labour force concepts and definitions which apply to ABS labour force statistics.

### 2.2 THE LABOUR FORCE FRAMEWORK

The Labour Force framework has been developed and refined with the principal aim of providing measures of the labour supply available for the production of economic goods and services (i.e. compatible with measures of economic activity within the national accounting production boundary), in order to monitor economic performance and formulate labour policy at national and international levels. It is based on international standards recommended by the International Labour Office and adopted by member countries of the Organisation for Economic Co-operation and Development (OECD) and many developing countries.

The framework views the population as either currently economically active (the labour force, comprised of the employed plus the unemployed) or inactive (not in the labour force). The labour force is thus conceptually equivalent to the stock measure of the supply of labour at a given point in time.

The main features of the labour force framework are internationally well-accepted, and follow naturally from this labour supply perspective:

- the notion of a scope population above a minimum age (e.g. above compulsory schooling age)
- the use of a short reference period to provide a stock measure at a point in time
- the notion of activity status, to be measured in relation to the reference period
- priority order in testing activity status, such that any employment activity takes precedence over other activities
- the notions of work and employment defined in the economic sense
- in testing employment activity, a practical minimum quantum of work is required, to cover all economic activity in the reference period
- the employed, the unemployed and the inactive are thus mutually exclusive and exhaustive, and unemployment is defined in relation to total lack of work, active steps to obtain work, and availability for work.

## 2.2 THE LABOUR FORCE FRAMEWORK *continued*

In the same formal (labour force as labour supply) conceptual framework, comparable measures can also be formed for status in employment, marginal attachment to the labour force (including discouraged job-seekers), and time-related underemployment. The framework also offers the flexibility to provide separate measures of the usually economically active population (for example, in Australia, labour force experience and job search experience).

## 2.3 EMPLOYMENT

*Employed persons* are those over the age of 15 years who, during the survey reference week, worked for one hour or more for pay, profit or payment in kind in a job or business, or on a farm; or worked for one hour or more without pay in a family business or on a farm; or who had a job but were not at work for a number of specified reasons; or were employers, self-employed persons or unpaid family helpers who had a job, business or farm, but were not at work.

The definition of employment specifically refers to work for at least one hour. This short reference period is used to ensure that any work which contributes to the national accounting measures of national production is included in the measure of employed.

Persons are classified as employed based on the actual activities of each person, and this categorisation does not depend on their participation in labour market programs. Persons who participate in labour market programs are counted as employed, unemployed or not in the labour force according to how they respond to questions in the labour force survey about their actual activity in the week before the interview.

For example, the Community Development Employment Projects (CDEP) scheme is a program provided by the Federal Government for Aboriginals and Torres Strait Islanders living in remote, rural and urban areas. It enables the Indigenous community or organisation to pool the unemployment benefit entitlements of individuals into direct wages for those Aboriginals and Torres Strait Islanders who choose to participate in local employment in various community development or organisation programs as an alternative to receiving individual income support payments. The relationship between CDEP communities and organisations and the individual participants who are undertaking paid work is treated by ABS as an employer-employee relationship. The individual participants are considered to be in paid employment, even though they are paid for their work from funds originating as unemployment benefits. Chapter 4 provides more information about the CDEP.

As another example, under 'work for the dole' schemes, unemployed persons are required to work on not-for-profit community-based projects for a number of hours per week, which, at the relevant award rate of pay, equates to the unemployment benefit entitlement. Superficially, such persons might be regarded as 'employed' as they are working for one hour or more for a payment. However, the participants receive their unemployment benefit payments directly from the administering government agency and not from the organisations undertaking the

### 2.3 EMPLOYMENT *continued*

community projects, and the organisations do not have an employer/employee relationship with the scheme participants. Accordingly, persons participating in 'work for the dole' schemes are not regarded as being in paid employment but are considered to be undertaking unpaid work. Depending on other activity they undertake in the survey reference period, they may be classed as unemployed or not in the labour force.

### 2.4 UNEMPLOYMENT

*Unemployed persons* are defined as those who were not employed during the reference week and who had actively looked for full time or part time work at any time during the four weeks up to the end of the reference week, and were available to start work in the reference week (or would have been except for temporary illness), or were waiting to start a new job or waiting to be called back to their job.

*Actively looking for work* encompasses a range of formal and informal job search activities and includes: writing, telephoning or applying in person to an employer for work; answering an advertisement for a job; checking factory noticeboards or the touchscreens at Centrelink offices; being registered as a job seeker with Centrelink; checking or registering with any other employment agency; advertising or tendering for work; and contacting friends or relatives for work. Persons undertaking only passive job search, such as just looking in newspapers and reading job advertisements, are not considered to be actively looking for work.

### 2.5 NOT IN THE LABOUR FORCE

*Persons not in the labour force* comprise those in the population that satisfy neither the employment nor unemployment criteria. They include persons who don't want to work for a variety of reasons such as homemakers, retirees from the labour force, and those who can't work as a result of a variety of disabilities. It also includes people who are in hospital, prison, or other institutions.

There are many people who, while not in the labour force, can be considered to have an attachment to the labour force. Persons who have a marginal attachment to the labour force may satisfy some, but not all, of the criteria required to be classified as employed or unemployed. For example, they may want to work and are available to work but were not actively looking for work. A particular group are those people who want to work, are available but have given up looking for work because they believe there are no jobs available in their locality or their line of work. This group are often referred to as *discouraged jobseekers*.



## CHAPTER 3

## ESTIMATES OF LABOUR FORCE CHARACTERISTICS OF INDIGENOUS AND NON-INDIGENOUS AUSTRALIANS

### 3.1 INTRODUCTION

The following estimates of the labour force characteristics of the Indigenous and non-Indigenous populations aged 15 years and over are based on data collected in the LFS. The estimates are presented in more detail in the tables in the Appendix.

It is important to consider the relative strengths and weaknesses of the LFS as a data source for Indigenous labour force information. Readers are strongly urged to refer to the chapters which provide information about the labour force concepts and definitions used in the LFS, the Indigenous population estimates which are used as survey benchmarks, the methodology of the LFS and to consider how these affect the interpretation of LFS estimates for the Indigenous population.

LFS estimates are subject to sampling variability; that is they may differ from the estimates that would have been produced if all Indigenous people were included in the survey. Small estimates, such as are derived for population groups which themselves are small, are subject to high sampling variability. The sampling error is one measure of the sampling variability. It is important to take into account the sampling errors associated with the estimates for the Indigenous population, in particular when making comparison between broad geographic regions or over the years. Chapter 8 provides more information about the reliability of estimates based on a sample survey.

### 3.2 EMPLOYMENT AND UNEMPLOYMENT, FEBRUARY 2000

#### 3.2.1 Employment

There were an estimated 110,900 Indigenous people aged 15 years and over in employment in February 2000 (table 3.1). This represented 44% of the Indigenous population aged 15 years and over. The employment to population ratio for Indigenous males was 51%, compared with 36% for Indigenous females (see Appendix table A1). Overall, Indigenous persons accounted for 1.2% of the total number of persons in employment.

There were 38,100 Indigenous persons employed in Capital cities, 12,200 employed in Sparsely settled areas and 60,600 in the Balance of State (table 3.1). The employment to population ratio was 48% in Capital cities, 27% in Sparsely settled areas and 47% in the Balance of State (see Glossary for an explanation of the geographic classification).

Nearly 20% of the Indigenous population aged 15 years and over live in sparsely settled areas, which in general are remote areas where employment opportunities are scarce. In contrast, less than 1% of the non-Indigenous population live in such areas. Indigenous people participating in the Commonwealth Government's Community Development Employment Projects scheme, who are classified by the ABS as employed, are likely to form a significant proportion of the Indigenous labour force in sparsely settled areas.

### 3.2.1 Employment *continued*

For the non-Indigenous population, the 8.8 million employed persons represented 59% of the population aged 15 years and over in February 2000. The employment to population ratio was 68% for non-Indigenous males and 51% for non-Indigenous females (see Appendix table A2). The employment to population ratio was 60% for non-Indigenous persons in Capital cities, 76% in Sparsely settled areas and 57% in the Balance of State.

Indigenous males accounted for 57% of all Indigenous persons in employment in February 2000: the same as the ratio for non-Indigenous males (see Appendix tables A1 and A2).

## 3.1

### LABOUR FORCE STATUS OF PERSONS AGED 15 YEARS AND OVER, FEBRUARY 2000

Area	Employed '000	Unemployed '000	Labour force '000	Not in the labour force '000	Total population '000	Labour force participation rate %	Unemployment rate %
INDIGENOUS							
Capital city	38.1	7.6	45.7	33.3	79.0	57.8	16.7
Sparsely settled	12.2	*1.3	13.5	32.6	46.1	29.3	*9.4
Balance of State	60.6	14.8	75.4	53.8	129.3	58.4	19.7
Total	110.9	23.7	134.6	119.8	254.4	52.9	17.6
NON-INDIGENOUS							
Capital city	5 831.9	419.0	6 250.9	3 469.2	9 720.1	64.3	6.7
Sparsely settled	64.1	**0.4	64.5	19.4	83.9	76.9	**0.6
Balance of State	2 908.5	275.4	3 183.9	1 929.4	5 113.2	62.3	8.6
Total	8 804.5	694.7	9 499.2	5 418	14 917.2	63.7	7.3

\* Estimate has a relative standard error of between 25% and 50% and should be used with caution

\*\* Estimate has a relative standard error greater than 50% and is considered too unreliable for general use

### 3.2.2 Unemployment

There were an estimated 23,700 Indigenous persons who were unemployed in February 2000. Of these, 7,600 lived in Capital cities, 1,300 in Sparsely settled areas, and 14,800 in the Balance of State.

The unemployment rate for the Indigenous population was 17.6% in February 2000. The unemployment rate was 16.7% for Indigenous people living in Capital cities and 19.7% for the Balance of State. For Indigenous people living in Sparsely settled areas, the unemployment rate was 9.4%. However, estimates for unemployment for this geographic area should be used with great care because they have fluctuated considerably over the years and are subject to high sampling and other errors. Sparsely settled areas are regions which generally have limited employment opportunities and this is reflected in the low number of Indigenous people actively looking for work in these areas.

The standard error on the February 2000 unemployment rate of 9.4% is estimated to be  $\pm 3.3$  percentage points (or a relative standard error of 34.6%). This means there are about 2 chances in 3 that the true value (the number that would have been obtained if all Indigenous persons had been included in the survey) is within the range of 6.1% and 12.7%. There are about 19 chances in 20 that the true value is in the range of 2.8% and 16.0%. See Chapter 8 for more information about sample errors and their effect on the interpretation of survey estimates.



3.2.2 Unemployment <i>continued</i>	<p>There were 694,700 non-Indigenous persons unemployed in February 2000 (table 3.1). The unemployment rate for the non-Indigenous population was 7.3%. For non-Indigenous people the unemployment rate was 6.7% for those living in Capital cities and 8.6% for those in the Balance of State. The unemployment rate for non-Indigenous people for Sparsely settled areas in February 2000 was 0.6%. As with the estimate for Sparsely settled areas for Indigenous persons, this estimate should be used with great caution.</p> <p>Unemployed Indigenous males accounted for almost two-thirds (65%) of Indigenous unemployed persons (see Appendix table A1). For the non-Indigenous population, unemployed males accounted for 54% of unemployed persons (see Appendix table A2).</p>
3.2.3 Labour force	<p>The total number of Indigenous people who were in the labour force, that is who were either employed or unemployed, was estimated at 134,600 in February 2000. Of this number, 45,700 lived in Capital cities, 13,500 in Sparsely settled areas and 75,400 in the Balance of State (table 3.1)</p> <p>The labour force participation rate for the Indigenous population stood at 52.9% in February 2000. The labour force participation rate for Indigenous people in Capital cities was 57.8%, which was considerably higher than the rate for Sparsely settled areas (29.3%) and about the same as for the Balance of State (58.4%).</p> <p>Males accounted for 59% of the Indigenous labour force in February 2000 (Appendix table A1). The labour force participation rate for males (64%) was considerably higher than for females (42.6%).</p> <p>For the non-Indigenous population, the labour force participation rate was 63.7% in February 2000 (table 3.1). The labour force participation rate for non-Indigenous people in Capital cities was 64.3%, for Sparsely settled areas 76.9% and for the Balance of State 62.3%. Males accounted for 56% of the non-Indigenous labour force (Appendix table A2). The labour force participation rate for non-Indigenous males (72.9%) was considerably higher than for females (54.8%).</p>
3.2.4 Persons not in the labour force	<p>There were 119,800 Indigenous persons and 5,418,000 non-Indigenous persons who were not in the labour force in February 2000 (table 3.1). Of the Indigenous persons not in the labour force, 33,300 lived in Capital cities, 32,600 in Sparsely settled areas and 53,800 in the Balance of State. Females accounted for 63% of the total Indigenous persons not in the labour force, the same proportion as for the non-Indigenous population (Appendix table A1).</p>

### 3.3 EMPLOYMENT AND UNEMPLOYMENT OF INDIGENOUS AUSTRALIANS, 1994 TO 2000

The following estimates for Indigenous Australians show the labour force characteristics for March 1994 and for the months of February in the years 1995–2000. It is important to exercise great care in using the survey estimates to make comparisons across time. See Section 3.4 at the end of this Chapter for more information on the reliability and interpretation of the estimates.

#### 3.3.1 Employment 1994 to 2000

The number of Indigenous people in employment was 84,400 persons in 1994 (table 3.2). The number fluctuated over the years and stood at 110,900 persons in 2000. The employment to population ratio also fluctuated over that period, which recorded its highest levels of 44.7% in 1995 and 43.6% in 2000, and the lowest levels of 38.3% in 1994 and 38.9% in 1997 (see Appendix table A1). The employment to population ratio for the non-Indigenous population ranged from a low of 56.7% in 1994 to 59.0% in 2000 (Appendix table A2).

#### INDIGENOUS EMPLOYMENT



## 3.2

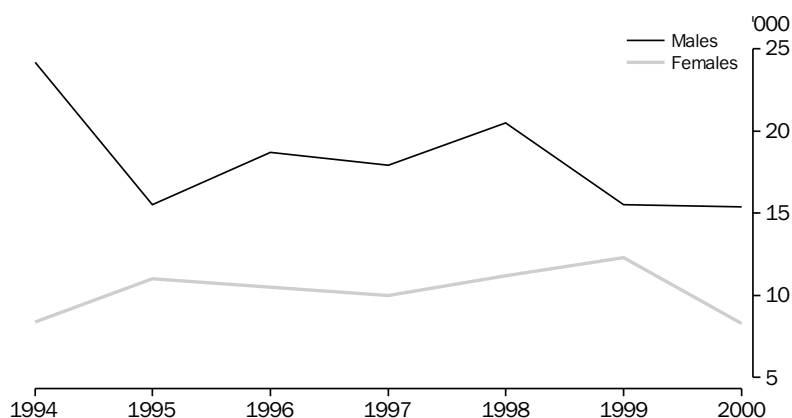
### LABOUR FORCE STATUS OF INDIGENOUS AUSTRALIANS AGED 15 YEARS AND OVER(a)

	<i>Employed</i>	<i>Unemployed</i>	<i>Labour force</i>	<i>Not in the labour force</i>	<i>Total population</i>	<i>Labour force participation rate</i>	<i>Unemployment rate</i>
<i>Year</i>	'000	'000	'000	'000	'000	%	%
1994	84.4	32.5	117.0	103.3	220.2	53.1	27.8
1995	100.6	26.6	127.2	97.9	225.1	56.5	20.9
1996	98.1	29.2	127.3	103.4	230.7	55.2	22.9
1997	92.1	27.9	120.0	116.5	236.5	50.7	23.3
1998	95.1	31.7	126.8	116.2	242.9	52.2	25.0
1999	98.9	27.7	126.7	122.0	248.6	50.9	21.9
2000	110.9	23.7	134.6	119.8	254.4	52.9	17.6

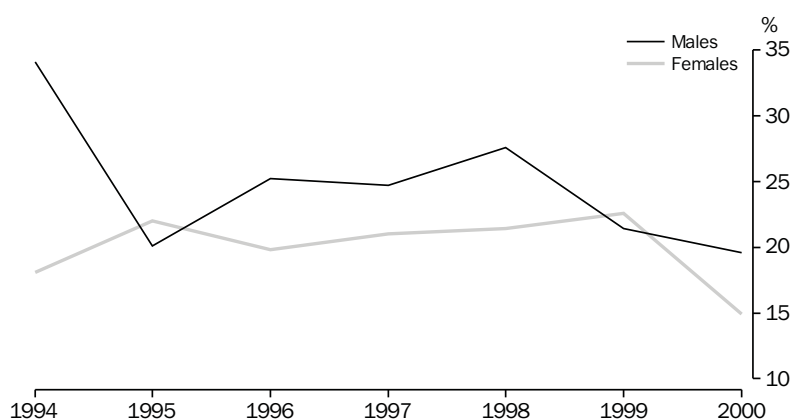
(a) Reference period is March 1994, and the month of February for subsequent years.

**3.3.2 Unemployment** The number of Indigenous people unemployed was 32,500 persons in 1994. The number fluctuated over the years and stood at 23,700 persons in 2000. The unemployment rate for Indigenous people also fluctuated between 1994 and 2000, with the highest levels of 27.8% in 1994 and 25% in 1998, and lowest levels of 20.9% in 1995 and 17.6% in 2000. This compares with the unemployment rate for non-Indigenous people which, over the same 7-year period, recorded its highest levels of 10.6% in 1994 and 9.7% in 1995, and the lowest levels of 8.1% in 1999 and 7.3% in 2000.

INDIGENOUS UNEMPLOYMENT



INDIGENOUS UNEMPLOYMENT RATE



**3.3.3 Labour force** The size of the Indigenous labour force has ranged from 117,000 in 1994 to 134,600 persons in 2000. The labour force participation rate for Indigenous people fluctuated over that period, with the highest levels of 56.5% in 1995 and 55.2% in 1996, and the lowest levels of 50.9% in 1999 and 50.7% in 1997. This compares with the labour force participation rate for non-Indigenous people which, over the same 7-year period, recorded its highest levels of 64.1% in 1996 and 1997, and the lowest levels of 63.4% in 1994 and 1999.

**3.3.4 Persons not in the labour force** The number of Indigenous persons not in the labour force was 103,300 in 1994. The number fluctuated over the 7-year period, between 97,900 and 122,000.

### 3.4 RELIABILITY AND INTERPRETATION OF THE ESTIMATES

The reliability of estimates of the labour force characteristics of Indigenous people are affected by the very small number of Indigenous persons in the LFS sample, the relatively small size of the Indigenous population and particular collection difficulties in sparsely settled areas. Caution is required in the use and interpretation of the estimates.

The estimates are subject to *sampling error*, which is a measure of the variability that occurs by chance because a sample, rather than the entire population, is surveyed. The estimates are also affected by *non-sampling errors*. The main sources of non-sampling errors are response errors and non-response bias. Although non-sampling errors are difficult to quantify, they can have a significant effect on the estimates.

In general terms, very small estimates are subject to high sampling errors (relative to the size of the estimate). Estimates for Indigenous people living in sparsely settled areas, for example for unemployment, have very high standard errors associated with them. As a result, these estimates are not as reliable as estimates for Indigenous people living in capital city areas or for Australia in total.

Comparisons over time in Indigenous labour force characteristics, both in absolute terms and relative to the rest of Australia's population, should be interpreted with particular caution. It is also important to take into account the high standard errors associated with annual movements. The standard error of the year to year movement is approximately 40% greater than the standard error of the estimate. An estimate of the standard error which applies to annual movements can be derived from the information provided in Appendix tables A4 and A7 and from the information in Chapter 8.

Although the Indigenous population has a younger age structure than the non-Indigenous population, the estimates have not been age-standardised to adjust for differences in age structure. This is especially relevant in comparisons of rates and ratios, such as the unemployment rate, of the Indigenous and non-Indigenous populations.

The changing propensity of persons to identify as being of Aboriginal or Torres Strait Islander origin also affects the analysis of movements over time, although the effect of this cannot be quantified. The effects of the expansion of the CDEP scheme since 1994 (see Chapter 4) should also be borne in mind.

Chapter 8 provides more information about sampling error and non-sampling error.

## CHAPTER 4

### 4.1 INTRODUCTION

## COMMUNITY DEVELOPMENT EMPLOYMENT PROJECTS

The Community Development Employment Projects (CDEP) scheme is a significant feature of the labour force participation by Indigenous people, in particular in sparsely settled regions. The availability of work through the CDEP scheme has had a significant impact on the employment prospects and labour force status of Indigenous people living in communities in rural and remote regions.

The CDEP scheme was established in 1976 by the Australian Government to provide local employment opportunities for Indigenous people. It is a voluntary program and does not operate in all Indigenous communities. The scheme has expanded and evolved considerably since 1976. In 1980–81 there were 1,300 participants in 18 communities. This had increased to 18,000 participants in 168 communities in 1990–91 and to 30,600 participants in 262 communities by 30 June 2000.

### 4.1

#### CDEP SCHEME PARTICIPATION

Year	Communities	Participants
	no.	'000
1981(a)	18	1.3
1986(a)	38	8.0
1991(a)	168	18.0
At 30 June		
1994	222	24.1
1995	252	27.0
1996	274	28.4
1997	268	30.0
1998	254	30.3
1999	265	31.9
2000	262	30.6

(a) Participants over financial year ended 30 June.

Source: Department of Aboriginal Affairs and Aboriginal and Torres Strait Islander Commission Annual Reports.

Indigenous communities and organisations can receive a grant, similar in value to the collective unemployment benefit entitlements of participating individuals within the community, to undertake a wide range of community development projects. Individuals can choose whether or not to participate in the scheme. Participants in the program forego their unemployment benefits in exchange for paid employment in the scheme. It provides the individuals with the potential to earn additional income above their unemployment benefit entitlement and to obtain labour market skills. The work in which they might engage is determined by the community or organisation, and includes activities such as house repairs and maintenance, road works, market gardening and fishing.

#### 4.2 CDEP PARTICIPANTS AS EMPLOYEES

The ABS classifies participants in the CDEP scheme as being employed. This has been a contentious issue for some analysts and commentators. The decision to include CDEP participants as employed has a significant impact on measures of the Indigenous labour force.

The way in which CDEP organisations operate creates the same basic legal and personal responsibilities as in other employer-employee relationships. Funds are used by the community or organisation to pay community members for work performed in the community. The usual legal obligations which employers have to employees, such as the provision of award wages and conditions, workers' compensation insurance and income tax liabilities, apply to CDEP organisations. The relationship between the CDEP organisations and the individual participants who are undertaking paid CDEP work is thus an employer-employee relationship and is treated by ABS as such. The individual participants are defined as being employed, even though they are paid for their work from funds originating as unemployment benefits.

Employment under CDEP schemes may be full time or part time, often the latter. It may also be seasonal or intermittent, and not all of the participants will be in employment at one particular time. CDEP scheme employment is not identified separately in the LFS.

## CHAPTER 5

## INDIGENOUS POPULATION ESTIMATES

### 5.1 INTRODUCTION

This chapter provides information on the population estimates used as part of the estimation procedure for LFS estimates presented in this Occasional Paper for the Indigenous and non-Indigenous populations.

### 5.2 ESTIMATED RESIDENT POPULATION

The LFS sample has been designed to provide reliable labour force estimates for Australia's civilian population. Estimates are calculated in such a way as to add up to the independently estimated age and sex distribution of the population, rather than reflecting the age and sex distribution within the sample. These procedures compensate for under-enumeration and non-response and lead to more reliable results.

The independent population estimates (benchmarks) used for the LFS for the usually resident population are derived from the latest available population estimates at the time the survey is conducted. They are based on the Estimated Resident Population (ERP) (see *Australian Demographic Statistics Quarterly* (Cat. no. 3101.0)). Population estimates for the total Australian population are based on counts from the five yearly Census, adjusted for under-enumeration, and adjusted for the number of births and deaths, and overseas migration. The ERP does not distinguish between Indigenous and non-Indigenous persons.

### 5.3 'EXPERIMENTAL' INDIGENOUS POPULATION ESTIMATES AND PROJECTIONS

Independent estimates of the size and structure of the Indigenous population are required to ensure that the LFS estimates of Indigenous persons employed, unemployed and not in the labour force are calculated in such a way as to add to the independently estimated Indigenous population aged 15 years and over, for the reasons outlined above.

However, deriving population estimates and projections for the Indigenous population is more problematic and prone to uncertainty. The large increase in the counts of Indigenous people between the 1991 and 1996 Population Censuses cannot be fully explained by demographic changes. This could reflect an increasing willingness of people to identify themselves as Indigenous on the census form. The large intercensal increases occurred primarily in urban areas of south-eastern Australia. In addition, data on births, deaths and migration of Indigenous people are incomplete.

Despite these difficulties, ABS has produced 'experimental' estimates of the size and demographic structure of the Indigenous population for 1991–1996 and 'experimental' projections for 1996–2006 (see *Experimental Projections of the Aboriginal and Torres Strait Islander Population* (Cat. no. 3231.0)). Two series of 'experimental' projections have been produced by the ABS, using different assumptions about changes in the propensity of people to identify as Indigenous. This publication presents LFS estimates based on both experimental estimates and experimental projections which incorporate the assumption that the propensity for a person to identify as Indigenous will remain the same as in the 1996 Census, and that the Indigenous population will only change as a result of natural increase (the so-called low series projections).

5.3 'EXPERIMENTAL'  
INDIGENOUS POPULATION  
ESTIMATES AND  
PROJECTIONS *continued*

Experimental estimates and projections of the Indigenous population were used to provide Indigenous benchmarks for males and females for the following geographic regions—Capital cities, Sparsely settled areas and Balance of State, as well as for Australia.

5.4 NON-INDIGENOUS  
POPULATION ESTIMATES  
AND PROJECTIONS

Population benchmarks for the non-Indigenous population were used to derive LFS estimates for non-Indigenous people. The benchmarks were derived by subtracting the experimental population estimates for the Indigenous population from the population estimates for the total population.



## CHAPTER 6

## SUMMARY OF LABOUR FORCE SURVEY METHODOLOGY

### 6.1 INTRODUCTION

This chapter provides a summary of the methodology of the Labour Force Survey (LFS). It also highlights some of the significant statistical issues associated with the use of the LFS to collect information that is representative of the Indigenous population. These issues have an impact on the interpretation of the data.

Some of the difficulties relate to the nature of the survey, such as the sample size, and to the appropriateness of the survey's definitions and concepts. Other difficulties include the small Indigenous population numbers, the wide dispersion of the Indigenous population, the high proportion who live in remote areas, and the cultural appropriateness of the survey questions.

The LFS is conducted by the ABS to provide monthly labour force statistics for Australia's civilian population. The emphasis in the survey is on the regular collection of specific data on demographic and labour force characteristics of the population.

Households selected for the LFS are interviewed each month for eight months. One eighth of the households are new to the sample each month. A responsible adult in each selected household is asked to provide information about the labour force status of the usual residents and visitors covered by the survey. A usual resident is one who regards that dwelling as their own or main home, and who usually lives there. Persons who are away from their usual residence for six weeks or less are enumerated at their usual residence wherever possible (by obtaining information from other usual residents present at the time of the survey).

The definitions used and the methodology of the survey are described in more detail in the monthly publication *Labour Force Australia* (Cat. no. 6203.0). More information about the measurement of employment and unemployment is available in *Information Paper: Measuring Employment and Unemployment* (Cat. no. 6279.0).

### 6.2 INDIGENOUS STATUS

Indigenous people have been included in the scope of the survey since 1966. In March 1994 a question was added to the survey questionnaire that sought to identify the Indigenous status of household members. The question was asked of all persons included in the LFS who were born in Australia, except those persons living in institutions and boarding schools. Based on the responses to this question, information can be provided from the LFS about the labour force characteristics of the Indigenous population.

## 6.2 INDIGENOUS STATUS

*continued*

The same question has been included in subsequent years (in each February survey) so that data are now available for seven successive years. This question is:

IS .....OF ABORIGINAL OR TORRES STRAIT ISLANDER ORIGIN?

No .....☐

Yes, Aboriginal .....☐

Yes, Torres Strait Islander .....☐

Yes, both Aboriginal and  
Torres Strait Islander .....☐

There may be an increase over time in the number of people who are identifying themselves as being of Indigenous origin in ABS data collections. The increase in counts of Indigenous persons between 1991 and 1996 Censuses exceeded that attributed to demographic change, and one explanation is a change in willingness to identify as Indigenous. For indicators such as employment and unemployment measures, comparisons over time may be affected if those people who are becoming more willing to self-identify as Indigenous people are themselves more closely integrated into mainstream employment than are the Indigenous people who have always identified as such.

Although the question on Indigenous origin allows people to identify as solely Aboriginal, solely Torres Strait Islander, or as both Aboriginal and Torres Strait Islander, it is not feasible to derive separate employment statistics for these three groups because of the small numbers of Indigenous people in the LFS sample.

## 6.3 SURVEY DEFINITIONS AND CONCEPTS

ABS labour force statistics are based on international standards and guidelines for measuring the currently economically active population, as described in Chapter 2.

### 6.3.1 Definition of employment

The definition of employment is based around working for at least one hour for pay or profit, or as contributing family workers in a family business or farm. Many activities associated with Indigenous activity may be excluded from the definition because they do not fall within the definition of employment or economic activity. The exception is work carried out under the CDEP scheme, where participating communities can define the work carried out for pay to include a wide range of activities normally excluded from the definition of economic activity, such as hunting and gathering and maintenance of sacred sites.

### 6.3.2 Definition of unemployment

The definition of unemployment is based around the concepts of actively looking for work and being available to start work. Where job opportunities are scarce or do not exist, such as in rural and remote regions, there will be little incentive to actively look for work. As a result there may be very little unemployment measured in such regions, with the population falling mainly into the employed and not in the labour force categories.

6.3.2 Definition of unemployment <i>continued</i>	<p>The Indigenous status question has not been collected in any of the LFS supplementary surveys that provide measures of persons with a marginal attachment to the labour force and of persons who are discouraged job seekers. It is unlikely that the survey sample would be large enough to make statistically meaningful observations of such measures for the Indigenous population.</p>
6.3.3 Survey reference period	<p>Interviews for the LFS are generally conducted during the two weeks beginning on the Monday between the 6th and 12th of each month. The information obtained relates to the week before the interview (i.e. the reference week).</p> <p>The labour force status of survey respondents is based on the strict application of definitions of employment and job search activities at around the time of the survey reference week. The LFS excludes from its employment and unemployment definitions work or job search activity over a longer period of time unless it also falls within the survey reference period, for example because it is seasonal or intermittent.</p> <p>The estimates of labour force characteristics of the Indigenous population are based on information collected in only one month out of twelve monthly surveys each year. The estimates represent the labour force characteristics for that month only, and are not intended to be representative of annual estimates. For the months in which the Indigenous status question has been asked (i.e. March 1994 and February of each following year), the labour force estimates for the Indigenous population refer mainly to employment activity in February (March in 1994), and to job search activity between mid January and mid February (mid February and mid March in 1994). This period may be an atypical period for many Indigenous people, for example those affected by the wet season in Northern Australia.</p>
6.4 SURVEY SCOPE AND COVERAGE	<p>The LFS includes all persons aged 15 years and over in Australia except members of the permanent defence forces, certain diplomatic personnel of overseas governments, overseas residents in Australia and members of non-Australian defence forces stationed in Australia. In common with other ABS household surveys, Jervis Bay Territory is excluded from the scope of the survey.</p>
6.5 SURVEY PROCEDURES	<p>Information is collected from persons in dwellings selected in the LFS by specially trained interviewers using a standard LFS questionnaire. The questionnaire used in the survey is published in <i>Information Paper: Questionnaires used in the Labour Force Survey</i> (Cat. no. 6232.0).</p> <p>There are cultural and practical difficulties associated with collecting quality data from some Indigenous communities in remote areas. To help overcome some of these problems, special procedures are used to collect information in these Indigenous communities. In particular, a 'short form', which collects the minimum data required to derive basic labour force characteristics, is available for use when interviewers encounter significant cultural, language or operational difficulties in remote areas. This also results in minimising respondent load and achieving maximum cooperation and response rates.</p>

## 6.6 SAMPLE SIZE

The LFS has a monthly sample of about 30,000 households, and currently includes some 63,000 persons aged 15 years and over. The sample, which covers about 0.5% of Australia's population, is designed to be representative of Australia's civilian population aged 15 years and over. The survey covers urban and rural areas across all States and Territories, and includes residents of both private and non-private dwellings (for example, boarding houses, hotels and hospitals).

The sample size is sufficient to provide reliable estimates for levels and changes in the major labour force characteristics of the total population for Australia and for each State and Territory. The survey sample is not specifically designed to provide estimates for small population groups, such as the Indigenous population, or for small geographic areas.

Over the seven years for which LFS information is available for the Indigenous population, the survey sample has included an average of 1,100 persons each February/March who identified themselves as being of Indigenous origin. This sample size is adequate for providing broad aggregates of labour force characteristics at the Australia level for the small and widely dispersed Indigenous population. However, the Indigenous sample is too small to provide reliable estimates by State and Territory, and by age group, and of year to year movements.

With the relatively small sample of Indigenous persons in the LFS, the sampling variability associated with the estimates for the Indigenous population are quite large. Further information is provided in Chapter 8.

The LFS includes sparsely settled areas, which are defined as geographic areas with dwelling densities less than 0.06 dwellings per square kilometre. These areas are excluded from many ABS household surveys because they are costly and difficult to enumerate and make no significant contribution to national or State and Territory estimates except the Northern Territory.

Since 1994, each year an average of about 470 persons (around 250 Indigenous and 220 non-Indigenous) who live in sparsely settled areas were included in the February/March LFS. While less than 1% of the non-Indigenous population aged 15 years or more live in the remote and sparsely settled areas of Australia, just under 20% of the Indigenous population do so.

## 6.7 SAMPLE DESIGN

The LFS sample design is based on a multi-stage area sample of private dwellings (about 30,000 houses, flats, etc.) and a list sample of non-private dwellings (hotels, motels, boarding houses, etc.). The sample is designed so that, within each State or Territory, each dwelling has the same probability of selection in the sample. The sampling fractions for each State and territory differ, in order to enable reliable estimates of the main labour force characteristics for each State and Territory to be compiled. Since the last sample redesign in September 1997, the sampling fractions range from 1 in 83 dwellings in Tasmania, to 1 in 300 dwellings in NSW.

## 6.7 SAMPLE DESIGN

*continued*

The LFS sample is not spread evenly across Australia or across a State or Territory. The sample is clustered for the practical reason of reducing the costs associated with sample maintenance and of interviewer travel between selected dwellings. The more highly clustered the sample (that is the larger the number of selected units in a small area), the cheaper it is to enumerate but also the less reliable are estimates derived from the sample (since the sample is confined to a small area and may be less representative).

In the sparsely settled areas of Australia the LFS sample is heavily clustered, so that the majority of the survey's sample of Indigenous people living in remote Indigenous communities is represented by a relatively small number of communities. This has significant implications for estimates for Indigenous persons in sparsely settled areas, as there is a high degree of variability between Indigenous communities with respect to employment opportunities, and to the labour force characteristics of community residents. This is mainly a result of the CDEP scheme which, in many remote communities, is the major source of earned income for community residents. As outlined in Chapter 4, participants in CDEP schemes are treated as employed. The LFS does not separately identify whether an Indigenous person or community is participating in a CDEP scheme.

Not all Indigenous communities in remote areas participate in the CDEP scheme. However, in a community with a CDEP scheme, the majority of eligible adult members of the community could have an employed labour force status when surveyed in the LFS if they worked in the survey reference week. If there is a large proportion of CDEP participating communities amongst the small number of communities selected in the LFS, the estimates for employed Indigenous persons will be atypically high. This also has the potential to cause wide fluctuations in labour force characteristics of remote Indigenous communities over time if the sample moves from communities participating in CDEP to those which don't.

## 6.8 ESTIMATION PROCEDURE

As discussed above, estimates of numbers of Indigenous persons with selected labour force characteristics were derived from the LFS by using a complex ratio estimation procedure which ensures that the estimates conform to the age and sex distribution of the Indigenous population obtained from an independent estimate, rather than reflecting the age and sex distribution within the sample.

### 6.8.1 Benchmarking

The independent population estimates (benchmarks) for the Indigenous population that are based on the 'experimental' estimates and projections of the Indigenous population were used to provide benchmarks for males and females for the following geographic regions—Capital cities, Sparsely settled areas and Balance of State. Benchmarks by broad age categories, by broad geographic region, were also used although there was insufficient sample to provide estimates of labour force characteristics for persons by age group. Chapter 5 provides a more complete discussion of the population estimates used to produce LFS estimates for the Indigenous and non-Indigenous populations.

6.8.2 Estimation This paper provides estimates for the labour force characteristics of the Indigenous population based on the LFS. The estimates are for the labour force status (employment, unemployment, and not in the labour force) classified by Indigenous males, females and persons. These estimates are classified by geographic regions (Capital cities, Sparsely settled areas and Balance of State).

The labour market circumstances of Indigenous persons in sparsely settled areas are significantly different from Indigenous persons living in other areas. For this reason it was considered important to separate this region from the Balance of State. However, the survey estimates for Sparsely settled areas suffer more from the limitations of the survey. The high volatility of the estimates indicate that these estimates are not considered to be sufficiently reliable for most purposes and should be used with great caution.

Although there is a strong interest in Indigenous labour force estimates for the States and Territories, the sample size of Indigenous persons is too small to provide such estimates. The weighting and benchmarking of survey results used benchmarks for broad geographic regions, rather than States and Territories.

The Indigenous LFS estimates are based on one month's snapshot each year and so represent that month only, rather than representing a calendar or financial year. The estimates do not take into account the seasonal pattern of employment and unemployment. January and February are peak months in the levels of unemployment for the whole population, and this seasonality may be more pronounced for the Indigenous population because of the effects of the monsoon season in the north of Australia. The estimates represent March or February estimates only, and are not substitutes for estimates for the whole of the year.



## CHAPTER 7

### 7.1 FIVE YEARLY POPULATION CENSUS AND 1994 NATIONAL ABORIGINAL AND TORRES STRAIT ISLANDER SURVEY

## OTHER SOURCES OF INFORMATION ON INDIGENOUS LABOUR FORCE

User requirements for information on the labour force characteristics of the Indigenous population have previously been met using data from the five-yearly Census of Population and Housing and from the 1994 National Aboriginal and Torres Strait Islander Survey (NATSIS). Table 7.1 provides estimates from these two collections as well as the LFS. Care is needed in comparing the data. Although the estimates available from the three sources are based on the same underlying concepts, there are differences in their collection methodologies, definitions, questions and estimation procedures which affect the comparability of the data.

The five yearly Census is the only comprehensive source of information on the Indigenous population which enables comparisons with other Australians. The Census also provides information for small geographic regions. However, the Census collects only a limited range of labour force questions, and the form is largely completed by people answering the questions by themselves, without an interviewer present.

The 1994 NATSIS was a survey of approximately 17,500 Indigenous persons. The survey collected more detailed labour force information than in the Census, and the data was collected using trained Indigenous interviewers. Although the underlying concepts were the same as in the LFS, the questions and definitions differed slightly from those used in the LFS, in particular in what was interpreted as looking for work. NATSIS results are available for each of the 35 Aboriginal and Torres Strait Islander Commission regions across Australia.

It should be noted that the estimates of the Indigenous population used as population benchmarks for the 1994 NATSIS are considerably lower than those used as benchmarks for the LFS. As a result, the estimates for the total population are also lower by a significant amount. Population benchmarks for the NATSIS were based on the latest available estimates of the Indigenous population at the time of the survey. These were the experimental estimates of the Indigenous population based on the 1991 Population Census, updated to June 1994. LFS benchmarks are based on estimates and projections of the Indigenous population which take into account the large increase in counts of Indigenous people between 1991 and 1996 (see Chapter 5).

Estimates from the 1994 NATSIS and 1996 Census presented in Table 7.1 reflect the geographic regions of Capital city, Rural area and Other urban area. The estimates for Rural area and Other urban area are not directly comparable to the estimates for Sparsely settled areas and Balance of State from the LFS.

7.1 FIVE YEARLY  
POPULATION CENSUS AND  
1994 NATIONAL  
ABORIGINAL AND TORRES  
STRAIT ISLANDER SURVEY

*continued*

One significant difference between the NATSIS and LFS estimates for unemployment and persons not in the labour force is in the treatment of registrations with the (then) Commonwealth Employment Service. In the NATSIS, persons who did not have a job who stated they were not looking for work but who were registered with the Commonwealth Employment Service were considered to be unemployed. The LFS would classify these people as being not in the labour force. An analysis of NATSIS results suggests that around 20% of all people classed as unemployed in NATSIS would be reclassified as being not in the labour force if the LFS definitions were strictly applied. Approximately 75% of these reclassified persons could be classed as discouraged jobseekers by LFS definitions.

## 7.1 COMPARISON OF SOURCES OF LABOUR FORCE STATUS OF INDIGENOUS PERSONS AGED 15 YEARS AND OVER

Source(a)	Employed no.	Unemployed no.	Not in the labour force no.	Population no.	Unemployment Rate %	Participation rate %	Employment to population ratio %
CAPITAL CITY							
1994 LFS	32 700	10 700	24 500	67 900	24.7	63.9	48.1
1994 NATSIS	19 300	10 900	18 800	48 900	36.1	61.6	39.5
1996 LFS	30 600	8 300	32 600	71 500	21.3	54.4	42.8
1996 Census	27 900	7 900	30 100	65 800	22.2	54.4	42.3
SPARSELY SETTLED AREAS							
1994 LFS	11 800	**600	28 200	40 500	**4.9	30.5	29.0
1994 NATSIS(b)	21 800	9 000	26 000	56 800	29.2	54.2	38.4
1996 LFS	19 800	*900	21 300	41 900	*4.2	49.3	47.2
1996 Census(b)	14 600	3 000	18 900	36 500	17.0	48.1	39.9
BALANCE OF STATE							
1994 LFS	40 000	21 200	50 600	111 800	34.6	54.7	35.8
1994 NATSIS(b)	24 000	20 300	31 400	75 700	45.8	58.5	31.7
1996 LFS	47 700	20 000	49 600	117 300	29.5	57.7	40.7
1996 Census(b)	39 900	13 300	55 900	109 100	25.0	48.7	36.5
AUSTRALIA							
1994 LFS	84 400	32 500	100 300	220 200	27.8	53.1	38.3
1996 NATSIS	65 100	40 200	76 200	181 500	38.2	58.0	35.9
1996 LFS	98 100	29 200	103 400	230 700	22.9	55.2	42.5
1996 Census	82 300	24 200	104 900	211 400	22.7	50.4	38.9

\* Estimate has a relative standard error of between 25% and 50% and should be used with caution

\*\* Estimate has a relative standard error greater than 50% and is considered too unreliable for general use

(a) Data for LFS refer to March 1994 and February 1996, NATSIS to April to July 1994, and 1996 Census to August 1996.

(b) In NATSIS and Census data, Sparsely settled area refers to Rural, and Balance of State to Other urban areas.

Source: National Aboriginal and Torres Strait Islander Survey 1994: Detailed Findings (4190.0), 1996 Census of Population and Housing, unpublished data.

## 7.2 FUTURE DATA COLLECTIONS

The ABS recognises the need for accurate, regular and timely information about the employment status of the Indigenous population. To achieve this, annual estimates of Indigenous persons employed, unemployed and not in the labour force, based on the LFS, will be produced from 2002 onwards. It is proposed to increase the effective sample size of Indigenous persons contributing to the LFS estimates, by including the Indigenous status question each month. This will improve the sampling



## 7.2 FUTURE DATA COLLECTIONS *continued*

errors associated with LFS estimates for the Indigenous labour force, although the estimates will continue to be subject to many of the shortcomings already identified earlier in this publication.

The ABS has committed to a series of initiatives which will increase the quality and availability of statistics about the Indigenous population. The central focus of the Indigenous statistics program is the Census, and ABS is working towards improving the quality of Indigenous data collected in the 2001 Census. In addition, ABS is extending and giving higher priority in its program to developing and improving the quality of Indigenous data available from administrative collections. ABS is also introducing an expanded program of household surveys to provide more extensive, regular and timely statistics about the Indigenous population.

In particular, the Indigenous Social Survey, which is being conducted in 2002 and is planned to run every six years thereafter, will collect information on a wide range of social and other issues from a sample of about 11,000 Indigenous people. This will provide selected data on labour force and employment arrangements of Indigenous people using concepts and definitions which are comparable with other regular household surveys such as the LFS, the General Social Survey and the National Health Survey.



## CHAPTER 8

## RELIABILITY OF ESTIMATES

Estimates presented in this publication are subject to two sources of error: sampling error and non-sampling error.

### 8.1 NON-SAMPLING ERROR

The main sources of non-sampling error are response errors and non-response bias. These may occur in any enumeration whether it is a full count or a sample.

Response errors include errors on the part of both respondents and interviewers. These reporting errors may arise through inappropriate wording of questions, misunderstanding of what data are required, inability or unwillingness to provide accurate information and mistakes in answers to questions.

Non-response bias arises because the persons for whom no response is available may have different characteristics in relation to labour market behaviour than persons who were included the survey.

Non-sampling errors are difficult to quantify in any collection. However every effort is made to minimise these errors in the LFS by careful design of questionnaires, intensive training and supervision of interviewers and efficient operating procedures. Non-response bias is minimised by call-backs to those households which do not respond, and is compensated for in the estimation process.

There are a number of other issues associated with collecting information from Indigenous persons in communities in sparsely settled areas. One example is the appropriateness of labour force concepts in areas without a formal labour market. Although special procedures are used in some Indigenous communities, there are still cultural and practical difficulties in collecting quality information from Indigenous people in communities in sparsely settled areas. Operational issues include the high turnover of trained interviewers in sparsely settled areas, the seasonal fluctuations in population numbers as well as in employment opportunities, and the high population mobility.

Responses in the LFS may be given by any responsible adult in each selected household. Reporting errors may arise when the respondent provides information for another member of the household without being fully aware of their labour force details. Although this is a minor issue for the survey in general, the higher mobility of Indigenous household members may affect the reporting on details such as actively looking or availability for work.

### 8.2 SAMPLING ERROR

The LFS estimates are based on information obtained from a sample of the population, and are subject to *sampling error*. The sampling error is a measure of the variability that occurs by chance because a sample, rather than the entire population, is surveyed.

## 8.2 SAMPLING ERROR

*continued*

One measure of the likely difference is given by the standard error. There are about two chances in three that the sample estimate will differ by less than one standard error from the estimates that would have been obtained if all dwellings had been included, and about nineteen chances in twenty that the difference will be less than two standard errors. The magnitude of the sampling error depends on the sample design, the sample size and the population variability. The main contribution to sampling error for the Indigenous estimates from the LFS is the sample size. The larger the sample on which the estimates are based, the smaller the sampling error.

Another measure is the *relative standard error*, which is obtained by expressing the standard error as a percentage of the estimate to which it refers. The smaller the sample estimate, the higher the relative standard error. The small sample size of Indigenous persons results in estimates of labour force characteristics which are considerably less precise and less stable than comparable aggregate estimates for non-Indigenous persons. This is reflected in the relatively high standard errors for the survey estimates derived for Indigenous persons.

Very small estimates are subject to such high standard errors, relative to the size of the estimate, as to detract seriously from their value for most reasonable uses. In the tables in this publication, only estimates with relative standard errors of 25% or less, and percentages based on such estimates, are considered sufficiently reliable for most purposes. Accordingly, while included in the tables, estimates and percentages with relative standard errors between 25% and 50% are preceded by an asterisk (e.g. \*3.4), to indicate they are subject to high standard errors and should be used with caution. Estimates with a relative standard error greater than 50% are also shown, preceded by two asterisks (e.g. \*\*3.4), but are considered too unreliable for general use. Appendix tables A4 and A6 show the levels at which estimates have relative standard errors of, for example, 25% and 50%.

Movements in the level of an estimate are also subject to sampling variability. The standard error of the movement depends on the levels of the estimates from which the movement is obtained rather than the size of the movement. As shown in Appendix table A7, movements between corresponding months of consecutive years (annual movements) are subject to greater sampling variability (approximately 40% greater overall). The standard error for such movements can be estimated by finding the standard error of the *larger* of the two estimates from table A3 or table A5 as appropriate, and multiplying it by the corresponding factor from table A7.

Space does not allow for the separate identification of standard errors for each estimate for each year. Tables of standard errors for estimates of Indigenous and non-Indigenous persons are shown in the Appendix (tables A3 and A5 respectively). The standard error for particular population groups may differ to that shown in the tables. For example, for unemployed persons in sparsely settled areas, the standard error is

## 8.2 SAMPLING ERROR

*continued*

estimated to be 23% higher for Indigenous estimates, and 11% higher for non-Indigenous estimates, than the standard errors shown in Appendix tables A3 and A5 respectively. Table A7 shows the appropriate factors for selected population sub-groups.

Proportions and percentages (for example, unemployment rates) formed from the ratio of two estimates are also subject to sampling error. The size of the error depends on the accuracy of both the numerator and denominator. The formula for the relative standard error (RSE) of a proportion or percentage is:

$$RSE(x / y) = \sqrt{[RSE(x)]^2 + [RSE(y)]^2}$$

## 8.3 STANDARD ERROR EXAMPLES

As an example of the calculation and use of standard errors, consider the estimate for Australia of 110,900 Indigenous persons employed in February 2000. The standard error for this estimate is about 2,500 (Appendix tables A3). There are about 2 chances in 3 that the true value (the number that would have been obtained if the whole population had been included in the survey) is within the range 108,400 to 113,400 (that is,  $110,900 \pm 2,500$ ). There are about 19 chances in 20 that the true value is in the range 105,900 to 115,900 (that is,  $110,900 \pm 5,000$ ).

As a further example, the estimates for unemployed Indigenous persons in Capital cities and for Australia in February 2000 are 7,600 and 23,700 respectively. These estimates have relative standard errors of about 14% and 8% respectively (Appendix table A3).

The standard error for annual movements can be estimated by finding the standard error of the *larger* of the two estimates from Appendix table A3 or table A5 as appropriate, and multiplying it by the corresponding factor from Appendix table A7. As an example, the estimate for Indigenous persons employed in Capital cities was 35,600 in February 1999 and in February 2000 was 38,100 (an upward annual movement of 2,500). The standard error on the larger, February 2000, estimate was 1,450. Applying the annual movement factor of 1.35 from Appendix table A7 gives an estimated movement standard error of 2,000. There are about two chances in 3 that the true movement is within the range  $+2,500 \pm 2,000$  (that is, a range of 500 to 4,500), and nineteen chances in twenty that the true movement is in the range  $+2,500 \pm 4,000$  (that is, a range  $-1,500$  to  $+6,500$ ). As the actual movement is less than 4,000, the estimates for 1999 and 2000 are not statistically different at this level of confidence.



**APPENDIX****TABLES OF ESTIMATES AND STANDARD ERRORS**

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	<b>A7</b> Standard error factors	40

# A1

## LABOUR FORCE STATUS, INDIGENOUS POPULATION AGED 15 YEARS AND OVER(a)

	Employed	Unemployed	Not in the labour force	Population	Unemployment rate	Labour force participation rate	Employment to population ratio
	'000	'000	'000	'000	%	%	%
MALES							
Capital city							
1994	17.6	8.1	6.2	31.9	31.6	80.7	55.2
1995	19.1	4.7	8.9	32.7	19.8	72.7	58.3
1996	16.5	5.5	11.7	33.7	25.0	65.4	49.1
1997	16.8	6.7	11.2	34.7	28.5	67.7	48.5
1998	18.0	8.7	8.8	35.6	32.7	75.2	50.7
1999	19.7	4.5	11.9	36.2	18.7	67.0	54.5
2000	19.7	5.7	11.9	37.3	22.4	68.0	52.8
Sparsely settled							
1994	6.7	**0.6	12.8	20.2	**8.3	36.4	33.4
1995	11.3	**0.5	8.8	20.5	**4.0	57.3	55.0
1996	10.9	**0.6	9.4	20.9	**5.4	55.0	52.0
1997	10.9	*2.0	8.4	21.3	*15.7	60.7	51.2
1998	8.4	*1.1	12.4	21.9	*11.2	43.4	38.5
1999	9.6	**—	13.2	22.8	**—	42.0	42.0
2000	8.4	**—	14.9	23.3	**—	35.9	35.9
Balance of State							
1994	22.2	15.4	16.5	54.1	41.0	69.6	41.1
1995	31.2	10.3	13.7	55.2	24.9	75.3	56.6
1996	28.2	12.6	16.0	56.7	30.8	71.8	49.7
1997	26.8	9.2	22.2	58.1	25.5	61.8	46.1
1998	27.4	10.7	21.7	59.8	28.1	63.8	45.9
1999	27.4	10.9	22.8	61.2	28.5	62.7	44.8
2000	35.3	9.7	17.6	62.6	21.6	72.0	56.4
Australia							
1994	46.6	24.2	35.5	106.2	34.1	66.6	43.9
1995	61.6	15.5	31.4	108.5	20.1	71.1	56.8
1996	55.6	18.7	37.0	111.3	25.2	66.7	49.9
1997	54.5	17.9	41.8	114.2	24.7	63.4	47.7
1998	53.9	20.5	42.9	117.3	27.6	63.4	45.9
1999	56.7	15.5	48.0	120.2	21.4	60.1	47.2
2000	63.4	15.4	44.4	123.2	19.6	64.0	51.4

— nil or rounded to zero (including null cells)

\* Estimate has a relative standard error of between 25% and 50% and should be used with caution

\*\* Estimate has a relative standard error greater than 50% and is considered too unreliable for general use

(a) Reference period is March 1994, and the month of February for subsequent years.

...continued



# A1

## LABOUR FORCE STATUS, INDIGENOUS POPULATION AGED 15 YEARS AND OVER(a) — continued

	Employed	Unemployed	Not in the labour force	Population	Unemployment rate	Labour force participation rate	Employment to population ratio
	'000	'000	'000	'000	%	%	%
FEMALES							
Capital city							
1994	15.0	*2.6	18.3	35.9	*14.7	49.0	41.8
1995	13.3	4.7	18.9	36.9	26.2	48.9	36.1
1996	14.1	*2.8	21.0	37.9	*16.5	44.6	37.3
1997	11.4	*2.8	24.6	38.8	*19.6	36.6	29.4
1998	15.8	3.4	20.6	39.8	17.6	48.2	39.8
1999	15.9	4.3	20.5	40.7	21.3	49.6	39.1
2000	18.4	*1.9	21.4	41.7	*9.6	48.7	44.0
Sparsely settled							
1994	5.0	**—	15.3	20.3	**—	24.6	24.6
1995	9.3	**0.6	10.7	20.6	**6.4	48.0	45.0
1996	8.9	**0.2	11.8	21.0	**2.7	43.6	42.4
1997	6.7	**0.2	14.6	21.5	**3.6	32.1	31.0
1998	3.9	**0.5	17.7	22.1	**10.9	19.6	17.5
1999	6.2	**—	16.4	22.6	**—	27.3	27.3
2000	3.9	*1.3	17.7	22.8	*24.7	22.4	16.9
Balance of State							
1994	17.8	5.8	34.2	57.7	24.5	40.9	30.8
1995	16.4	5.7	36.9	59.0	25.7	37.4	27.8
1996	19.5	7.4	33.6	60.6	27.6	44.5	32.2
1997	19.5	7.0	35.6	62.1	26.3	42.7	31.4
1998	21.5	7.3	34.9	63.7	25.5	45.2	33.7
1999	20.1	8.0	37.1	65.1	28.4	43.1	30.8
2000	25.3	5.1	36.3	66.6	16.8	45.6	38.0
Australia							
1994	37.9	8.4	67.8	114.0	18.1	40.5	33.2
1995	39.0	11.0	66.5	116.6	22.0	43.0	33.5
1996	42.6	10.5	66.4	119.5	19.8	44.4	35.6
1997	37.6	10.0	74.7	122.3	21.0	38.9	30.7
1998	41.2	11.2	73.3	125.6	21.4	41.7	32.8
1999	42.1	12.3	74.0	128.4	22.6	42.4	32.8
2000	47.5	8.3	75.4	131.2	14.9	42.6	36.2

— nil or rounded to zero (including null cells)

\* Estimate has a relative standard error of between 25% and 50% and should be used with caution

\*\* Estimate has a relative standard error greater than 50% and is considered too unreliable for general use

(a) Reference period is March 1994, and the month of February for subsequent years.

...continued

	Employed	Unemployed	Not in the labour force	Population	Unemployment rate	Labour force participation rate	Employment to population ratio
	'000	'000	'000	'000	%	%	%
PERSONS							
Capital city							
1994	32.7	10.7	24.5	67.9	24.7	63.9	48.1
1995	32.4	9.4	27.8	69.7	22.6	60.1	46.5
1996	30.6	8.3	32.6	71.5	21.3	54.4	42.8
1997	28.2	9.5	35.8	73.5	25.1	51.3	38.4
1998	33.9	12.1	29.4	75.4	26.4	61.0	44.9
1999	35.6	8.8	32.4	76.8	19.9	57.8	46.3
2000	38.1	7.6	33.3	79.0	16.7	57.8	48.2
Sparsely settled							
1994	11.8	**0.6	28.2	40.5	**4.9	30.5	29.0
1995	20.6	*1.1	19.5	41.1	*5.1	52.6	50.0
1996	19.8	*0.9	21.3	41.9	*4.2	49.3	47.2
1997	17.5	2.3	23.0	42.8	11.5	46.4	41.0
1998	12.3	*1.5	30.1	44.0	*11.1	31.5	28.0
1999	15.8	**—	29.7	45.4	**—	34.7	34.7
2000	12.2	*1.3	32.6	46.1	*9.4	29.3	26.5
Balance of State							
1994	40.0	21.2	50.6	111.8	34.6	54.7	35.8
1995	47.7	16.0	50.6	114.3	25.2	55.7	41.7
1996	47.7	20.0	49.6	117.3	29.5	57.7	40.7
1997	46.3	16.1	57.8	120.2	25.8	51.9	38.5
1998	48.9	18.0	56.6	123.6	27.0	54.2	39.6
1999	47.5	18.9	59.9	126.3	28.5	52.6	37.6
2000	60.6	14.8	53.8	129.3	19.7	58.4	46.9
Australia							
1994	84.4	32.5	103.3	220.2	27.8	53.1	38.3
1995	100.6	26.6	97.9	225.1	20.9	56.5	44.7
1996	98.1	29.2	103.4	230.7	22.9	55.2	42.5
1997	92.1	27.9	116.5	236.5	23.3	50.7	38.9
1998	95.1	31.7	116.2	242.9	25.0	52.2	39.1
1999	98.9	27.7	122.0	248.6	21.9	50.9	39.8
2000	110.9	23.7	119.8	254.4	17.6	52.9	43.6

— nil or rounded to zero (including null cells)

\* Estimate has a relative standard error of between 25% and 50% and should be used with caution

\*\* Estimate has a relative standard error greater than 50% and is considered too unreliable for general use

(a) Reference period is March 1994, and the month of February for subsequent years.

	<i>Employed</i>	<i>Unemployed</i>	<i>Not in the labour force</i>	<i>Population</i>	<i>Unemployment rate</i>	<i>Labour force participation rate</i>	<i>Employment to population ratio</i>
	'000	'000	'000	'000	%	%	%
MALES							
Capital city							
1994	2 898.9	337.5	1 092.3	4 328.7	10.4	74.8	67.0
1995	2 992.0	314.0	1 080.1	4 386.1	9.5	75.4	68.2
1996	3 039.3	306.3	1 110.8	4 456.4	9.2	75.1	68.2
1997	3 059.1	308.6	1 160.5	4 528.2	9.2	74.4	67.6
1998	3 125.7	273.3	1 196.6	4 595.6	8.0	74.0	68.0
1999	3 179.5	264.8	1 232.1	4 676.4	7.7	73.7	68.0
2000	3 264.1	221.1	1 271.4	4 756.6	6.3	73.3	68.6
Sparsely settled							
1994	40.2	*2.8	5.6	48.6	*6.5	88.4	82.7
1995	42.1	*2.6	*3.6	48.2	*5.8	92.6	87.3
1996	42.4	*1.8	4.1	48.3	*4.1	91.4	87.7
1997	39.8	*1.8	7.3	48.9	*4.2	85.0	81.4
1998	43.1	**0.8	5.9	49.8	**1.8	88.1	86.5
1999	39.9	*4.2	4.1	48.2	*9.6	91.6	82.8
2000	41.0	**0.4	6.9	48.3	**0.9	85.7	84.9
Balance of State							
1994	1 506.6	195.8	654.6	2 357.0	11.5	72.2	63.9
1995	1 564.5	167.8	651.4	2 383.7	9.7	72.7	65.6
1996	1 596.5	163.7	654.8	2 415.0	9.3	72.9	66.1
1997	1 590.8	182.8	673.3	2 446.9	10.3	72.5	65.0
1998	1 601.9	186.5	696.7	2 485.1	10.4	72.0	64.5
1999	1 650.7	160.3	702.7	2 513.7	8.9	72.0	65.7
2000	1 671.8	155.9	717.1	2 544.9	8.5	71.8	65.7
Australia							
1994	4 445.7	536.1	1 752.5	6 734.3	10.8	74.0	66.0
1995	4 598.6	484.3	1 735.0	6 817.9	9.5	74.6	67.4
1996	4 678.2	471.9	1 769.7	6 919.8	9.2	74.4	67.6
1997	4 689.7	493.1	1 841.2	7 024.0	9.5	73.8	66.8
1998	4 770.7	460.6	1 899.3	7 130.6	8.8	73.4	66.9
1999	4 870.1	429.3	1 938.9	7 238.3	8.1	73.2	67.3
2000	4 976.9	377.4	1 995.4	7 349.8	7.0	72.9	67.7

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\*\* Estimate has a relative standard error greater than 50% and is considered too unreliable for general use

(a) Reference period is March 1994, and the month of February for subsequent years.

...continued

	Employed	Unemployed	Not in the labour force	Population	Unemployment rate	Labour force participation rate	Employment to population ratio
	'000	'000	'000	'000	%	%	%
FEMALES							
Capital city							
1994	2 238.9	241.9	2 055.5	4 536.3	9.7	54.7	49.4
1995	2 272.4	244.9	2 079.1	4 596.4	9.7	54.8	49.4
1996	2 356.1	226.7	2 091.1	4 673.9	8.8	55.3	50.4
1997	2 418.4	247.0	2 082.4	4 747.8	9.3	56.1	50.9
1998	2 424.1	211.4	2 176.7	4 812.2	8.0	54.8	50.4
1999	2 481.8	205.8	2 201.5	4 889.1	7.7	55.0	50.8
2000	2 567.8	197.9	2 197.8	4 963.5	7.2	55.7	51.7
Sparsely settled							
1994	26.0	**0.6	9.2	35.8	**2.4	74.3	72.5
1995	24.0	**0.6	10.8	35.4	**2.4	69.4	67.7
1996	22.8	**—	12.6	35.4	**—	64.5	64.5
1997	26.1	**0.5	9.1	35.6	**1.7	74.6	73.3
1998	28.9	**—	7.3	36.2	**—	79.8	79.8
1999	22.0	**0.7	12.8	35.5	**3.1	63.9	61.9
2000	23.1	**—	12.5	35.6	**—	64.9	64.9
Balance of State							
1994	1 049.3	136.9	1 190.3	2 376.5	11.5	49.9	44.2
1995	1 106.3	128.5	1 169.0	2 403.8	10.4	51.4	46.0
1996	1 129.4	126.7	1 181.5	2 437.6	10.1	51.5	46.3
1997	1 138.5	134.4	1 198.9	2 471.8	10.6	51.5	46.1
1998	1 160.9	136.1	1 211.1	2 508.1	10.5	51.7	46.3
1999	1 192.0	118.2	1 225.5	2 535.7	9.0	51.7	47.0
2000	1 236.7	119.4	1 212.2	2 568.3	8.8	52.8	48.2
Australia							
1994	3 314.2	379.4	3 255.0	6 948.6	10.3	53.2	47.7
1995	3 402.7	373.9	3 258.9	7 035.6	9.9	53.7	48.4
1996	3 508.3	353.4	3 285.2	7 146.9	9.2	54.0	49.1
1997	3 583.0	381.8	3 290.4	7 255.1	9.6	54.6	49.4
1998	3 613.9	347.5	3 395.1	7 356.5	8.8	53.8	49.1
1999	3 695.8	324.7	3 439.8	7 460.2	8.1	53.9	49.5
2000	3 827.6	317.3	3 422.5	7 567.4	7.7	54.8	50.6

— nil or rounded to zero (including null cells)

\* Estimate has a relative standard error of between 25% and 50% and should be used with caution

\*\* Estimate has a relative standard error greater than 50% and is considered too unreliable for general use

(a) Reference period is March 1994, and the month of February for subsequent years.

...continued

	<i>Employed</i>	<i>Unemployed</i>	<i>Not in the labour force</i>	<i>Population</i>	<i>Unemployment rate</i>	<i>Labour force participation rate</i>	<i>Employment to population ratio</i>
	'000	'000	'000	'000	%	%	%
PERSONS							
Capital city							
1994	5 137.9	579.4	3 147.8	8 865.1	10.1	64.5	58.0
1995	5 264.4	558.8	3 159.2	8 982.5	9.6	64.8	58.6
1996	5 395.4	533.0	3 201.9	9 130.3	9.0	64.9	59.1
1997	5 477.4	555.6	3 242.9	9 275.9	9.2	65.0	59.0
1998	5 549.8	484.7	3 373.2	9 407.7	8.0	64.1	59.0
1999	5 661.3	470.6	3 433.6	9 565.4	7.7	64.1	59.2
2000	5 831.9	419.0	3 469.2	9 720.1	6.7	64.3	60.0
Sparsely settled							
1994	66.2	*3.4	14.8	84.4	*4.9	82.4	78.4
1995	66.0	*3.2	14.4	83.6	*4.6	82.8	79.0
1996	65.2	*1.8	16.7	83.7	*2.7	80.0	77.9
1997	65.9	*2.2	16.4	84.5	*3.2	80.6	78.0
1998	71.9	**0.8	13.3	86.0	**1.1	84.6	83.7
1999	61.9	4.9	16.9	83.7	7.4	79.8	73.9
2000	64.1	**0.4	19.4	83.9	**0.6	76.9	76.4
Balance of State							
1994	2 556.0	332.7	1 844.9	4 733.5	11.5	61.0	54.0
1995	2 670.7	296.3	1 820.4	4 787.4	10.0	62.0	55.8
1996	2 726.0	290.4	1 836.3	4 852.7	9.6	62.2	56.2
1997	2 729.3	317.2	1 872.2	4 918.7	10.4	61.9	55.5
1998	2 762.8	322.6	1 907.8	4 993.2	10.5	61.8	55.3
1999	2 842.8	278.5	1 928.2	5 049.5	8.9	61.8	56.3
2000	2 908.5	275.4	1 929.4	5 113.2	8.6	62.3	56.9
Australia							
1994	7 760.1	915.5	5 007.5	13 683.0	10.6	63.4	56.7
1995	8 001.1	858.3	4 994.0	13 853.5	9.7	64.0	57.8
1996	8 186.6	825.2	5 054.9	14 066.7	9.2	64.1	58.2
1997	8 272.6	874.9	5 131.5	14 279.1	9.6	64.1	57.9
1998	8 384.5	808.1	5 294.3	14 486.9	8.8	63.5	57.9
1999	8 566.0	754.0	5 378.7	14 698.6	8.1	63.4	58.3
2000	8 804.5	694.7	5 418.0	14 917.2	7.3	63.7	59.0

\* Estimate has a relative standard error of between 25% and 50% and should be used with caution

\*\* Estimate has a relative standard error greater than 50% and is considered too unreliable for general use

(a) Reference period is March 1994, and the month of February for subsequent years.

# A3

## STANDARD ERRORS OF ESTIMATES, INDIGENOUS POPULATION

Size of estimate	Capital city		Sparsely settled		Balance of State		Australia	
	SE	RSE	SE	RSE	SE	RSE	SE	RSE
	no.	%	no.	%	no.	%	no.	%
100	110	110.0	90	90.0	90	90.0	110	110.0
200	180	90.0	140	70.0	170	85.0	180	90.0
300	240	80.0	180	60.0	230	76.7	240	80.0
500	320	64.0	240	48.0	320	64.0	330	66.0
700	380	54.3	280	40.0	400	57.1	400	57.1
1 000	460	46.0	340	34.0	500	50.0	500	50.0
1 500	550	36.7	400	26.7	620	41.3	620	41.3
2 000	630	31.5	450	22.5	720	36.0	710	35.5
2 500	700	28.0	500	20.0	800	32.0	800	32.0
3 000	750	25.0	500	16.7	850	28.3	850	28.3
3 500	800	22.9	550	15.7	900	25.7	900	25.7
4 000	850	21.3	600	15.0	950	23.8	1 000	25.0
5 000	900	18.0	600	12.0	1 050	21.0	1 050	21.0
7 000	1 000	14.3	700	10.0	1 200	17.1	1 250	17.9
10 000	1 100	11.0	750	7.5	1 300	13.0	1 400	14.0
15 000	1 200	8.0	800	5.3	1 450	9.7	1 600	10.7
20 000	1 300	6.5	850	4.3	1 500	7.5	1 750	8.8
30 000	1 400	4.7	900	3.0	1 600	5.3	1 950	6.5
40 000	1 450	3.6	950	2.4	1 650	4.1	2 100	5.3
50 000	1 500	3.0	1 000	2.0	1 650	3.3	2 200	4.4
65 000	1 500	2.3	..	..	1 650	2.5	2 300	3.5
80 000	1 550	1.9	..	..	1 650	2.1	2 400	3.0
100 000	..	..	..	..	1 650	1.7	2 450	2.5
130 000	..	..	..	..	1 600	1.2	2 550	2.0
150 000	..	..	..	..	..	..	2 600	1.7
175 000	..	..	..	..	..	..	2 650	1.5
200 000	..	..	..	..	..	..	2 650	1.3
250 000	..	..	..	..	..	..	2 700	1.1

.. not applicable

# A4

## INDIGENOUS POPULATION ESTIMATES WITH RELATIVE STANDARD ERROR OF 25% OR MORE

Relative standard error	Capital city	Sparsely settled	Balance of State	Australia
%	no.	no.	no.	no.
25	2 900	1 700	3 800	3 800
30	2 200	1 200	2 800	2 800
35	1 700	900	2 100	2 100
40	1 300	700	1 600	1 600
45	1 000	600	1 300	1 200
50	800	500	1 000	1 000

# A5

## STANDARD ERRORS OF ESTIMATES, NON-INDIGENOUS POPULATION

Size of estimate	Capital city		Sparsely settled		Balance of State		Australia	
	SE	RSE	SE	RSE	SE	RSE	SE	RSE
	no.	%	no.	%	no.	%	no.	%
100	50	50.0	70	70.0	60	60.0	40	40.0
200	90	45.0	140	70.0	120	60.0	70	35.0
300	130	43.3	200	66.7	160	53.3	110	36.7
500	200	40.0	300	60.0	240	48.0	170	34.0
700	260	37.1	390	55.7	310	44.3	220	31.4
1 000	350	35.0	500	50.0	400	40.0	300	30.0
1 500	470	31.3	640	42.7	530	35.3	410	27.3
2 000	580	29.0	740	37.0	640	32.0	510	25.5
2 500	650	26.0	800	32.0	750	30.0	600	24.0
3 000	750	25.0	900	30.0	850	28.3	700	23.3
3 500	850	24.3	950	27.1	900	25.7	750	21.4
4 000	900	22.5	1 000	25.0	1 000	25.0	850	21.3
5 000	1 050	21.0	1 050	21.0	1 150	23.0	1 000	20.0
7 000	1 300	18.6	1 150	16.4	1 350	19.3	1 250	17.9
10 000	1 600	16.0	1 250	12.5	1 650	16.5	1 550	15.5
15 000	2 000	13.3	1 350	9.0	2 050	13.7	1 950	13.0
20 000	2 350	11.8	1 350	6.8	2 350	11.8	2 300	11.5
30 000	2 850	9.5	1 350	4.5	2 800	9.3	2 900	9.7
40 000	3 300	8.3	1 300	3.3	3 200	8.0	3 350	8.4
50 000	3 650	7.3	1 250	2.5	3 500	7.0	3 750	7.5
65 000	4 100	6.3	1 200	1.8	3 850	5.9	4 200	6.5
80 000	4 450	5.6	1 150	1.4	4 200	5.3	4 650	5.8
100 000	4 850	4.9	..	..	4 500	4.5	5 100	5.1
130 000	5 400	4.2	..	..	4 950	3.8	5 700	4.4
150 000	5 650	3.8	..	..	5 150	3.4	6 050	4.0
175 000	6 000	3.4	..	..	5 400	3.1	6 400	3.7
200 000	6 250	3.1	..	..	5 650	2.8	6 750	3.4
250 000	6 750	2.7	..	..	6 000	2.4	7 300	2.9
300 000	7 150	2.4	..	..	6 300	2.1	7 800	2.6
500 000	8 300	1.7	..	..	7 100	1.4	9 150	1.8
1 000 000	9 800	1.0	..	..	8 100	0.8	11 050	1.1
2 000 000	11 150	0.6	..	..	8 900	0.4	12 800	0.6
5 000 000	12 500	0.3	..	..	9 550	0.2	14 650	0.3
10 000 000	13 050	0.1	..	..	..	..	15 500	0.2
15 000 000	..	..	..	..	..	..	15 750	0.1

.. not applicable

# A6

## NON-INDIGENOUS POPULATION ESTIMATES WITH RELATIVE STANDARD ERROR OF 25% OR MORE

Relative standard error	Capital city	Sparsely settled	Balance of State	Australia
%	no.	no.	no.	no.
25	3 100	4 000	3 900	2 200
30	1 700	2 900	2 400	1 000
35	1 000	2 200	1 500	400
40	500	1 700	1 000	100
45	300	1 300	700	..
50	100	1 000	400	..

.. not applicable

# A7

## STANDARD ERROR FACTORS

	<i>Indigenous</i>				<i>Non-Indigenous</i>				
	<i>Capital city</i>	<i>Sparsely settled</i>	<i>Balance of State</i>	<i>Australia</i>	<i>Capital city</i>	<i>Sparsely settled</i>	<i>Balance of State</i>	<i>Australia</i>	<i>Australia</i>
Annual movement	1.35	1.53	1.38	1.38	1.40	1.41	1.40	1.41	1.40
Employed	1.00	1.11	1.01	1.02	0.99	0.99	0.99	0.99	0.98
Unemployed	1.07	1.23	1.03	1.05	0.96	1.10	0.97	0.96	1.12
Not in Labour Force	1.02	0.98	1.02	1.00	1.10	1.09	1.10	1.10	1.04
Male									0.99
Female									0.98

See Chapter 8 for information on the use of the factors to calculate standard errors for annual movements and for selected groups within the population.



## GLOSSARY

<b>Actively looking for work</b>	Includes writing, telephoning or applying in person to an employer for work; answering an advertisement for a job; checking factory noticeboards or the touchscreens at Centrelink offices; being registered with Centrelink as a jobseeker; checking or registering with any other employment agency; advertising or tendering for work; and contacting friends or relatives.
<b>Balance of State</b>	Includes all parts of Australia except those covered by Capital city areas and sparsely settled areas.
<b>Capital city</b>	Includes all State and Territory capital city Statistical Divisions.
<b>Community Development Employment Projects (CDEP) scheme</b>	This is a community-based employment and community development scheme operated by the Commonwealth Government for Indigenous people living in remote, rural and urban areas. Indigenous people are paid wages by CDEP organisations to undertake work and / or training.
<b>Contributing family worker</b>	A person who works without pay, in an economic enterprise operated by a relative.
<b>Employed</b>	<p>Persons aged 15 years and over who, during the reference week:</p> <ul style="list-style-type: none"><li>■ worked for one hour or more for pay, profit, commission or payment in kind in a job or business, or on a farm (comprising employees, employers and own account workers); or</li><li>■ worked for one hour or more without pay in a family business or on a farm (i.e. contributing family workers); or</li><li>■ were employees who had a job but were not at work and were: on paid leave; on leave without pay for less than four weeks up to the end of the reference week; stood down without pay because of bad weather or plant breakdown at their place of employment for less than four weeks up to the end of the reference week; on strike or locked out; on workers' compensation and expected to be returning to their job; or receiving wages or salary while undertaking full-time study; or</li><li>■ were employers, own account workers or contributing family workers who had a job, business or farm, but were not at work.</li></ul>
<b>Employment/population ratio</b>	For any group, the number of employed persons expressed as a percentage of the civilian population aged 15 years and over in the same group.
<b>Labour force</b>	For any group, persons who were employed or unemployed, as defined.
<b>Labour force status</b>	A classification of the civilian population aged 15 years and over into employed, unemployed or not in the labour force, as defined. The definitions conform closely to the international standard definitions adopted by the International Conferences of Labour Statisticians.

<b>Not in the labour force</b>	Persons who were not in the categories employed or unemployed, as defined. They include persons who were keeping house (unpaid), retired, voluntarily inactive, permanently unable to work, persons in institutions (hospitals, gaols, sanatoriums, etc.), trainee teachers, members of contemplative religious orders, and persons whose only activity during the reference week was jury service or unpaid voluntary work for a charitable organisation.
<b>Participation rate</b>	For any group, the labour force expressed as a percentage of the civilian population aged 15 years and over in the same group.
<b>Sparsely settled area</b>	An area with a dwelling density of less than 0.06 dwellings per square kilometre.
<b>Unemployed</b>	<p>Persons aged 15 years and over who were not employed during the reference week, and:</p> <ul style="list-style-type: none"> <li>■ had actively looked for full-time or part-time work at any time in the four weeks up to the end of the reference week and:</li> <li>■ were available for work in the reference week, or would have been available except for temporary illness (i.e. lasting for less than four weeks to the end of the reference week); or</li> <li>■ were waiting to start a new job within four weeks from the end of the reference week and would have started in the reference week if the job had been available then; or</li> <li>■ were waiting to be called back to a full-time or part-time job from which they had been stood down without pay for less than four weeks up to the end of the reference week (including the whole of the reference week) for reasons other than bad weather or plant breakdown.</li> </ul>
<b>Unemployment rate</b>	For any group, the number of unemployed persons expressed as a percentage of the labour force in the same group.



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